

CALIFORNIA ENERGY COMMISSION

1516 NINTH STREET
SACRAMENTO, CA 95814-5512

July 19, 2001



Ms. Alicia Torre
Calpine Corporation
6700 Koll Center Parkway, Suite 200
Pleasanton, CA 94566

Dear Ms. Torre:

RE: EAST ALTAMONT ENERGY CENTER SECOND SET OF DATA REQUESTS

Pursuant to Title 20, California Code of Regulations, section 1716, the California Energy Commission requests the information specified in the enclosed data requests. The information requested is necessary to: 1) more fully understand the project, 2) assess whether the facility will be constructed and operated in compliance with applicable regulations, 3) assess whether the project will result in significant environmental impacts, 4) assess whether the facilities will be constructed and operated in a safe, efficient and reliable manner, and 5) assess potential mitigation measures.

This second set of data requests (#10-123) is being made in the areas of air quality, alternatives, biology, cultural, land use, soils and water, traffic and transportation, transmission system engineering, and visual resources. Written responses to the enclosed data requests are due to the Energy Commission staff on or before August 17, 2001, or at such later date as may be mutually agreed upon.

If you are unable to provide the information requested, need additional time, or object to providing the requested information, please send a written notice to me within 10 days of receipt of this notice. The notification must contain the reasons for the inability to provide the information or the grounds for any objections (see Title 20, California Code of Regulations section 1716 (f)).

If you have any questions regarding the enclosed data requests, please call me at (916) 657-4394.

Sincerely,

Cheri L. Davis
Energy Facility Siting Project Manager

Enclosure

cc: Docket (01-AFC-4)
Proof of Service List
Nancy Werdel, Western Area Power Administration

EAST ALTAMONT ENERGY CENTER
DATA REQUESTS
(01-AFC-4)

Technical Area: Alternatives

Author: Susan Lee

BACKGROUND

Under CEQA, alternatives must be considered that have the potential to (a) meet most project objectives, and (b) reduce or eliminate impacts of the proposed project. While the Applicant's stated project objectives are fairly broad, the Applicant has limited alternative sites to a very small geographic area. Also, according to AFC Table 9.2-2, the potential impacts of the proposed EAEC site include presence of threatened or endangered species, cultural/archaeological sensitivity, and proximity to Mountain House School. As shown in Table 9.2-2, none of the 6 alternative sites considered in Section 9 appear to meet the CEQA requirement that it reduce or eliminate those impacts. Therefore, additional alternative sites must be identified and evaluated.

DATA REQUESTS

10. In order to evaluate potential alternative site configurations, please provide a more detailed and larger version of the site plan without the aerial photo base (Figure 2.2-1 is difficult to read). The format of Figure 5.1-2 is a good model for level of detail, but is still too small to make out the specifics. Please include a legend, if necessary, for any site plan details that are too small to label. The figure or figures should clearly identify, in color, the locations of the water and gas pipeline connections to the project and the location of the transmission line that would serve the plant.
11. It is impossible to distinguish the gas lines from water lines and reclaimed water lines on black and white version of Figure 9.1-1. Existing transmission lines are similarly difficult to identify. Please provide a separate figure or figures (size 11X17) illustrating how each of the 6 alternative sites would be served with natural gas, water, and transmission lines.
12. Given that "the purpose of a merchant generating facility ... is to generate and sell electric power to deregulated markets," (AFC Section 9.1.1), the specific location of facility alternatives can be fairly broad (i.e., throughout northern and central California). The AFC (Section 9.2.2.1) restricts alternative sites to "northeastern Alameda County, or the western San Joaquin County area, or the southeastern Contra Costa County area." Explain why alternatives are limited to this small geographic area and why other alternative sites further from this area would not meet project objectives.

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Technical Area: Air Quality

Author: Tuan Ngo, P.E.

BACKGROUND:

Detailed Specifications of the Turbines:

Section 8.1.5 of the AFC indicates that the project will utilize three General Electric 7251 (GE 7FB) gas turbine/heat recovery steam generator (HRSG) units, each equipped with a dry low NO_x combustor and selective catalytic reduction (SCR) system. Table 8.1A-1 listed the operational parameters for the turbine/HRSG/duct burner units, which were used to calculate their emissions. The GE7FB turbine is a new model, which offers better performance and reliability over the current 7FA model turbines. The GE7FB model firing temperature is hotter and offers a higher compression ratio than the older model. Therefore, the GE7FB's NO_x emissions, even with the employment of a low NO_x combustor, are expected to be at 25 ppm. These emissions are much higher than with the older GE7FA turbines, which are usually be at the 9 ppm level. It is not clear from the information provided in AFC Section 8.1.5 and Table 8.1A-1 that the higher NO_x emissions have been considered.

DATA REQUEST

13. Please provide a manufacturer's list of emissions and operational parameters for the GE7FB turbine/duct burner units.
14. Please provide vendor information related to the control efficiency of the SCR system proposed for the combined cycle scenarios. The information should include the type of catalyst, the bed depth, operating temperature range, scheduled maintenance and catalyst replacement, and discussion of methods to be used to maintain the turbine NO_x emissions on a continuous basis. If this information is not available, a vendor or manufacturer's performance guarantee can be used as a substitute.
15. Please provide the CO oxidation catalytic system manufacturer specifications or a vendor's performance guarantee.
16. Please provide all assumptions and calculations used to develop the turbine/duct burners' emissions listed in Table 8.1A-1.

BACKGROUND

Startup and Shutdown Emissions:

Table 8.1-20 lists the estimated startup emissions for the facility. Footnotes of the table indicate that these startup emissions were developed from source tests and vendor data, with reference to Tables 8.1A-7a and 7b. Tables 8.1A-7a and 7b list the source test results of the Crockett Cogeneration facility and the emissions data provided by

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Westinghouse, a different turbine manufacturer, for the Sutter and the San Francisco Energy Cogeneration power plants. The turbines that were used in the Crocket Cogeneration project have been discontinued by GE and are different from the GE7FB, and the startup emissions provided by Westinghouse cannot be substituted for the GE type turbines. Therefore, the facility startup emissions listed in Table 8.1-20 are not appropriate.

DATA REQUEST

17. Please provide vendor supplied startup and shut down emissions data and the duration of each event for the GE7FB turbines.
18. Please provide all assumptions and calculations for the facility startup and shut down emissions using the new vendor data.
19. Please provide a discussion of the facility start-up and shut down sequence. A manufacturer- provided chart, which shows the NO_x and VOC emissions versus the time of the turbines during start-up, would suffice.

BACKGROUND

Duct Burner:

AFC Section 8.1.5 indicates that each turbine/HRSG unit will be equipped with a 732 MMBTU/hr low NO_x design duct burner. The manufacturer name, design specifications and emissions for the duct burners are not provided in the AFC.

DATA REQUEST

20. Please provide the duct burners' manufacturer name, the design specifications and emissions estimates.

BACKGROUND

Auxiliary Boiler:

AFC Section 8.1.5 indicates that the facility will include a 10,000 lbs/hr auxiliary boiler, which will be equipped with an SCR system. The AFC references Table 8.1A-2 for the boiler specifications. Table 8.1A-2 merely lists the estimated emissions of the auxiliary boiler; no vendor brochure or SCR performance guarantee has been provided.

DATA REQUEST

21. Please provide a vendor brochure, which lists the specifications of the boiler including stack dimensions and exhaust flow, the low NO_x burner, and the boiler's expected air contaminant emissions.

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22. Please provide a vendor performance guarantee, which shows the levels of NO_x and ammonia, for the boiler's SCR system.

BACKGROUND

Cooling Tower:

AFC Section 8.1.5 indicates that the facility will include a 19-cell cooling tower, which will be equipped with a drift eliminator system capable of reducing the drift rate to 0.0005%. The AFC references Table 8.1A-3 for the cooling tower specifications. Table 8.1A-3 merely lists the estimated emissions of the cooling tower; No vendor brochure for the cooling tower or the drift eliminator has been provided.

DATA REQUEST

23. Please provide a vendor brochure for the cooling tower, which includes the tower stack dimensions and exhaust flow.
24. Please provide vendor literature describing the design of the drift eliminator and a drift rate guarantee for the cooling tower drift eliminator.

BACKGROUND

Project SO₂ Emissions Estimates:

Table 8.1-15 lists the typical characteristics and heating value of natural gas. Tables 8.1-16 to 18 provide estimates of sulfur dioxide (SO₂) emissions assuming a sulfur content of 0.25 grain per 100 standard cubic feet (gr./100scf). PG&E has indicated in other power plant siting cases that their supplied natural gas sulfur content can go as high as 1 gr./100scf. Thus the project's SO₂ emissions have been underestimated.

DATA REQUEST

25. Please revise emissions calculations using the highest PG&E guaranteed sulfur content unless Calpine can obtain a guarantee from PG&E that the delivered natural gas will not have sulfur content higher than 0.25 gr./100scf.

BACKGROUND

Sulfur Dioxide Emission Impacts:

Table 8.1-21 of the AFC indicates that the project's SO₂ emissions are estimated to be 21.3 TPY. Because the project SO₂ emissions are less than 100 TPY, the AFC concludes that offsets for SO₂ are not required pursuant to the Bay Area Air Quality Management District (District) rules and regulations. Because the project area is non-attainment for PM₁₀ and SO₂ is a precursor to PM₁₀, we believe that appropriate mitigation for the project's SO₂ emissions may be necessary if the project's SO₂

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emissions contribute to a significant secondary PM10 impact. An analysis of the project's SO2 emissions contribution to the formation of secondary PM10 needs to be provided.

DATA REQUEST

26. Please provide an analysis showing the project's SO2 emissions contribution to the formation of secondary PM10 and whether that contribution constitutes a significant air quality impact.
27. If the project's SO2 emissions contribution to the formation of secondary PM10 is significant, please identify the necessary mitigation such as offsets. In addition, please provide a discussion of whether such mitigation measures are effective to reduce the project's contribution to secondary PM10 impacts to a level of insignificance.

BACKGROUND

Insufficient Information for the Proposed Emission Reduction Certificates:
In the AFC and the confidential submittal, Calpine proposes to offset the proposed project's NOx and VOC emission increases with a number of emission reduction credit certificates. The information provided to staff includes the number and the amount of credits for each certificate. Staff cannot verify the effectiveness of the proposed offsets without information on the location of each credit certificate and the method employed to achieve these emission reduction credits.

DATA REQUEST

28. Please provide a brief description of each emission reduction certificate including the location and the method employed to achieve such emission reductions.
29. Please provide a discussion of whether the emission reduction credits from the listed banking certificates are effective to reduce the facility emission impacts to a level of insignificance.

BACKGROUND

PM10 Emission Reductions from Road Paving:
Calpine proposes to mitigate the project's PM10 emissions by paving portions of roads at various locations within a 65-mile radius from the proposed project. Calpine provided staff with estimations of emission reductions resulting from the paving of the identified roads. The information provided is not sufficient for staff to verify that such estimates are accurate. The applicant may submit its response to Data Requests 30 through 32 under cover of confidentiality.

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DATA REQUEST

30. Please provide a general description of each type or class of vehicles, and written records of each type of vehicles traveling on such roads.
31. Please provide a description and a discussion of the appropriateness of the methodology used to collect the dust samples on the chosen roads.
32. Please provide a discussion of why moisture content of the dust samples had not been determined at the time the samples were collected.

BACKGROUND

Effectiveness of Road Dust Reductions as Mitigation:

Staff has concerns that the proposed emission reduction credits from road paving may not be effective to mitigate the project's contribution to the existing PM10 violations in the area. First, the particulate matter emissions from the turbines, auxiliary boiler, emergency generator and diesel fire pump are in the form of fine particulate matter of less than 2.5 μm , and the emission reduction credits have been estimated to contain particulate matter of less than 10 μm . Second, the fugitive emission reduction credits from paving of roads at the various locations within a 65-mile radius from the project site are not likely to mitigate the project contribution to the local area. Third, the area has experienced violations of the PM10 standards during the winter months, when emission reductions from road paving are almost non-existent because the soil is wet. Thus the potential for significant contribution to the PM10 standards during the winter months may not be adequately mitigated. The applicant may submit its response to Data Requests 33 through 35 under cover of confidentiality.

DATA REQUEST

33. Please provide a revised estimate of particulate matter emission reductions from paving of roads taking into account the portion of particulate that is less than 2.5 μm .
34. Please provide an analysis showing the effectiveness of the use of fugitive dust emission reductions from sources that are located within a 65-mile radius from the project site to mitigate the project particulate matter contribution to the atmosphere.
35. Please provide an analysis showing that the wintertime particulate matter emissions from the facility, after the proposed mitigation, will be reduced to a level of less than significance.

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BACKGROUND

Best Available Control Technology (BACT):

AFC Section 8.1.6 states that the project will utilize BACT such as SCR and a CO oxidation catalyst system for the turbines, which will maintain the turbines' emissions of NO_x and CO to 2.5 ppm (on an hourly basis) and 6 ppm, respectively. The USEPA, in a recent letter to the San Luis Obispo County Air Pollution Control District (attached) has commented that the BACT limit for gas turbines should be set at 2 ppm for NO_x on an hourly basis while the NH₃ slip maintained at 5 ppm. In addition, the EPA stated that BACT for CO should be set at 2 ppm on a 3-hour rolling average.

DATA REQUEST

36. Please provide a revised BACT analysis to respond to EPA's comments.

BACKGROUND

Cumulative Air Quality Impact Analysis:

A cumulative air quality impact analysis, which assesses the impacts of the project in conjunction with other nearby projects that have been permitted, but not yet in operation, will need to be provided by the applicant.

DATA REQUEST

37. Please advise on the status of obtaining a list of projects that meet the criteria listed in Section 8.1H "Cumulative Impacts Analysis Protocol." If the aforementioned list has been obtained, please submit the list of the emission sources to be included in the cumulative air quality impacts analysis. Upon staff's concurrence, please perform a cumulative impact analysis using the modeling method proposed in the AFC.

BACKGROUND

Excess Emissions During Initial Commissioning:

The initial commissioning of the project may cause emissions that exceed the limits that would be required during normal operation. The AFC (pages 8.1-36 and 8.1-39) discussed the potential emissions of the project during this period. The discussion, however, seems to indicate that the emissions from only one turbine were considered. In addition, an estimate of the duration of the initial commissioning period, any excess emissions the project would cause, and whether any mitigation is proposed are not provided.

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DATA REQUEST

38. Please provide a description of the commissioning sequence, the length of each activity or phase identified in the commissioning sequence, and the estimated emissions of each activity.
39. If the provided modeling analysis for the project during commissioning has changed in response to the data request above, please provide a revised modeling analysis for the commissioning period.
40. Please provide a discussion of any proposed mitigation. If no mitigation is provided, please explain why.

BACKGROUND

Steam Power Augmentation:

The AFC indicates that power augmentation during the summer months may be used to boost the production of electricity. It is not clear that the estimated emissions and the modeling results provided in the AFC reflect the scenarios where power augmentation is utilized.

DATA REQUEST

41. Please state whether or not steam is used in the power augmentation, and if the emissions estimates and modeling results reflect the expected emissions during power augmentation.
42. If the emissions estimates and modeling results do not reflect the facility emissions during the power augmentation period, please provide corrections for these results.

BACKGROUND

Ozone Limiting Option Modeling:

Page 8.1-36 of the AFC indicates that the project's NO₂ emission impacts will be estimated using ISC3_OLM modeling, which estimates the project's hour-to-hour NO₂ impacts using the hourly ozone data. This method assumes that the turbines' oxides of nitrogen (NO_x) are mostly NO and only 10 percent of the total NO_x emissions will be in the form of NO₂. Staff agrees with the applicant on the modeling principle. However, staff believes that the ISC3_OLM modeling option would underestimate the project's NO₂ emission impacts because of the assumption that the turbines' NO₂ is only 10 percent of the total NO_x. Staff believes that the turbines' NO₂/NO_x ratio is in the range of 30 to 50 percent.

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DATA REQUEST

43. Please provide a revised NO₂ emission impacts analysis using the Ozone Limiting Method and the assumption that the NO₂/NO_x ratio is in the 30 to 50 percent range.

BACKGROUND

New Violation of the State's 1-hr NO₂ and Annual PM₁₀ Standards:
Table 8.1E-5 of the AFC identifies that construction of the facility will result in a 1-hr NO₂ impact of 505 µg/m³ and an annual PM₁₀ impact of 35 µg/m³. Since the area is in attainment for such standards, the construction of the project will cause a new violation of the state's 1-hr NO₂ and annual PM₁₀ standards. It is not clear what steps Calpine will take to mitigate such impacts.

DATA REQUEST

44. Please provide mitigation steps that Calpine will take to ensure that the construction of the project will not cause a new violation of the state's 1-hr NO₂ and annual PM₁₀ standard.

BACKGROUND

The Project's NO₂ Impact Exceeds Significance Level for PSD Review:
The District Regulation 2, Rule 2-2-414 "PSD Air Quality Analysis" requires that a new major project must demonstrate that the project emissions will not cause or contribute to a violation of an air quality standard or exceedance of any applicable PSD increment. The rule also defines a facility as considered to cause or contribute to a violation of an air quality standard when the increase in emissions would cause a significant air quality impact. The District's Rule 2-2-233 defines a significant air quality impact as when an ambient concentration, resulting from the facility emissions, exceeds a pre-defined value for PM₁₀, SO₂, NO₂ or CO listed in that rule. For the 1-hr NO₂ standard, the significant threshold is listed as 19 µg/m³ in Rule 2-2-233. The project's normal operation will result in a 1-hr NO₂ impact of 110 µg/m³, which is higher than the significance threshold listed in Rule 2-2-233. Therefore, an analysis must be performed to demonstrate that the project will comply with the requirements of the District Rule 2-2-414.

DATA REQUEST

45. Please provide an analysis to demonstrate that the project will comply with the requirements of District Rule 2-2-414.

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Technical Area: Biological Resources

Author: Andrea Erichsen

BACKGROUND

Federally endangered and state threatened and endangered species are known to exist in the vicinity of the proposed East Altamont Energy Center (EAEC). There is also potentially suitable habitat for these species on and adjacent to the project site. The applicant will need to consult with a variety of agencies and obtain several permits relating to the potential loss of habitat or “take” of threatened or endangered species, as listed in Table 8.2-4 of the AFC.

Energy Commission staff is concerned about the timing of these consultations and permits relative to staff’s evaluation of the project. Table 8.2-4 lists application dates for some of the key permits as April 2002; a late application date for these permits will not allow staff to ensure that the project will comply with the requirements of these other agencies. In addition, a late application date will not allow agencies to comply with their requirement (per Section 25519 of the Public Resources Code) to complete relevant permits within 180 days of the Energy Commission’s determination of data adequacy. Energy Commission staff needs to make sure that these permits are proceeding on a schedule that is consistent with the AFC schedule, and the following requests must be addressed in detail to resolve staff’s concerns.

DATA REQUEST

46. Provide a discussion of what steps have been taken to initiate the U.S. Fish and Wildlife Service (USFWS) and California Department of Fish and Game (CDFG) permits for this project and any other details pertinent to these permits, including:
 - a. a record of conversations with the USFWS regarding the section 7 or section 10 consultations;
 - b. identification of the third party leading the section 7 or section 10 consultation; and
 - c. a record of conversations with the CDFG regarding the MOU, streambed alteration permits, take permits, and consistency analyses
47. Provide a discussion of requirements for a section 404 permit through the U.S. Army Corps of Engineers (USACE)
48. Provide a schedule for each permit required through the USFWS, CDFG, and USACE
49. Provide a discussion, schedule, and evidence of status of the Alameda county approval of Construction Plans (see Table 8.2-4)

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50. Please discuss when you anticipate obtaining the permits (as opposed to applying for them) and how this expected timeframe will synchronize with the Energy Commission's certification process. Provide a discussion and status report (include as much information as possible, such as letters from agencies, or permits, or permit applications) for the above mentioned permit requirements. Please also discuss how the dates for "application submitted" were determined, and whether or not these dates could be pushed forward.

BACKGROUND

The EAEC site occupies and affects habitats suitable for several endangered, threatened, and sensitive species listed in Table 8.2-1A and 8.2-1B. In particular, San Joaquin kit fox is a federally endangered species, which requires extensive survey protocols set forth by the USFWS. The AFC states that the applicant will conduct "protocol level surveys in the summer 2001, at locations identified by the USFWS as being occupied by the kit fox and potentially affected by the project."

DATA REQUEST

51. Please provide the kit fox survey data collected to date for the EAEC project site and vicinity (including linears).
52. If no data have been collected:
- a. Explain why and provide documentation justifying the lack of data;
 - b. Provide evidence of consultation with USFWS (letter etc.); and
 - c. If data need to be collected in the future, provide a schedule for future data collection as well as the following:
 - i) clear and thorough description of methods (i.e. attach USFWS protocol)
 - ii) maps of the survey routes and observations. Include on the map all burrows of ground squirrels and other animals whose burrows may be used by the San Joaquin kit fox; and
 - iii) resume of the biologist qualified to conduct the surveys for the San Joaquin kit fox in the northern end of its range.
53. Provide detailed analysis of on-site and off-site mitigation options, incorporating recent discussions with USFWS. Include letter or correspondence if possible. Include analysis of area and cost for land parcels of interest in the EAEC area and the option(s) EAEC intends to pursue.

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54. Provide the same level of survey information (data request numbers 51-53) for the following species: California red-legged frog, California tiger salamander.

BACKGROUND

The mitigation proposed in Section 8.2.3.2 discusses impacts of the EAEC on sensitive species such as Swainson's hawk (state threatened), burrowing owl (California species of special concern) and the white-tailed kite (fully protected). The EAEC will result in permanent loss of foraging habitat (and burrowing habitat for the burrowing owl). Construction of the EAEC may result in loss of hunting, nesting, and possibly communal roosting habitats.

DATA REQUEST

55. Please provide recently collected data on nesting and roosting sites for these three species.
56. Please provide a detailed methodology for the proposed surveys.
57. Please provide updated maps of the entire project site, including linears, clearly indicating sightings, nest locations, and roost locations, and including all burrowing owl burrows. The maps should be at a scale of at least 1"=2,000'.
58. Please discuss mitigation alternatives for loss of Swainson's hawk, burrowing owl, and the white-tailed kite habitat. Provide a thorough discussion of off-site mitigation options for loss of foraging habitats. Include contact list of organizations consulted and cost analysis for land parcels of interest to the applicant in the EAEC area.

BACKGROUND

A Biological Resources Mitigation Implementation and Monitoring Plan (BRMIMP) is required under the AFC process. The BRMIMP contains the full spectrum of approved mitigation and monitoring measures to ensure that the construction and operation of the power plant do not significantly harm biological resources. The final BRMIMP must be approved by the Energy Commission, the U.S. Fish and Wildlife Service and the California Department of Fish and Game prior to commencement of all ground-breaking activities. An outline of the BRMIMP was provided in Appendix 8.2E as a first step in developing the BRMIMP.

DATA REQUEST

59. Please provide a draft BRMIMP which contains all sections presented in the outline. If a section's information is not available at this time, provide the schedule for completing that section.

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BACKGROUND

The wastewater evaporation ponds mentioned in AFC section 8.14.2.3 and Data Adequacy Response Set 3, pages 8-9 are not evaluated adequately for their potential to impact waterfowl and amphibians, and other wildlife. The information provided in the Report of Waste Discharge (docketed June 14, 2001), sections 2.4, 2.5, and 2.6 (page 2-2 to 2-3), does not provide adequate scientific review and specific details on "Miscellaneous design" measures for protecting wildlife.

DATA REQUEST

60. Please provide a detailed analysis of ways in which wildlife will be protected from the evaporation ponds (e.g., design of sides of the ponds, fencing, netting, or monofilament line).
- a. Cite and describe the scientific evidence that such methods work.
 - b. Include discussion of maintenance operations and scientific methods proposed to monitor the efficacy of the protective measures.
 - c. Include a list of all protective measures to be employed, with diagrams specific to how the evaporation ponds will be designed to protect wildlife (diagrams in the Report of Waste Discharge are more oriented towards engineering of waste treatment aspects). Describe the proposed biological monitoring plan design and schedule, and a procedure for how potential problems with wildlife (i.e. dead birds, etc.) will be handled.

BACKGROUND

The AFC's section on Visual Resources proposes to use landscape screening around the EAEC. The proposal in Section 8.11.2.3 includes use of fast-growing evergreen trees and shrubs planted in informal groups around the fence perimeter of the EAEC. However, the current proposal may have adverse impacts to Federal and state listed species (California red legged frog and San Joaquin kit fox) because the trees may provide nesting and perching habitats for large avian predators who may then prey upon federal and state listed species in the area. The U.S. Fish and Wildlife Service as well as the California Department of Fish and Game have expressed their serious concern with this issue and CEC staff shares their concern.

DATA REQUEST

61. Please provide alternative landscaping plans, which would not use large trees, but may use multi-tiered berms and assemblages of native shrubs, forbs, and grasses. Other alternatives that address this concern may be presented for consideration. Include drawings, amount of land needed and potential impacts to other project aspects (such as visual resources).

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BACKGROUND

The Biological Resources section of the AFC, pages 8.2-25 to 8.2-26, discusses Cooling Tower Drift. However, there is no analysis as to whether the drift may adversely impact vernal pool communities in the area of the EAEC over the lifetime of the project.

DATA REQUEST

62. Please provide a literature review and analysis of the potential adverse impacts of the cooling tower drift constituents on vernal pool communities, over the life time of the project.

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Technical Area: Cultural Resources

Author: Roger Mason and Dorothy Torres

NOTE: Please submit any information that may reveal archaeological site location under confidential cover.

BACKGROUND

It cannot be determined from the AFC and Data Adequacy Responses whether local historical societies and local jurisdictions (cities and counties) were contacted to determine if any historical resources in or near the project area are listed in local historical inventories or registers. Such local inventories are often not reflected in information obtained from a records search at the appropriate Archaeological Information Center.

DATA REQUEST

63. Please provide a list of historical resources listed on local inventories or registers within one mile of the power plant site, access roads, laydown areas and all linear routes that are part of the project.
64. Please contact local historical societies and archaeological societies. Please provide copies of any responses from such societies. If historical or archaeological societies were contacted informally, please provide a discussion of the information they provided.

BACKGROUND

Although the AFC states that Alignment 3a for the Domestic Water Supply Lines was previously surveyed for a different project, the portion of this alignment along Bruns Road is not indicated as having been previously surveyed on the records search map (Attachment CR-1).

DATA REQUEST

65. Please provide a cultural resources survey report for the Bruns Road portion of Domestic Water Supply Line 3a. If no report for a previous project is available, please conduct the survey and submit the survey report as soon as possible.

BACKGROUND

In order to confirm that all cultural resources studies necessary for the CEQA process have been completed, staff needs to have cultural resources technical reports on file.

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DATA REQUEST

66. Please provide copies of the cultural resources survey report or reports (technical reports) that document the field surveys conducted by the applicant for this project. These surveys include those summarized in the AFC, Data Adequacy Response Set 1, and responses to Data Requests 2 and 3. These reports should be prepared following the portions of the SHPO's guidelines for "Archaeological Resource Management Reports" that pertain to survey reports. The report should contain a copy of relevant portions of USGS quads at 1:24,000 scale showing the project site and all linear routes and showing what areas were surveyed. Please provide completed DPR 523 forms in an appendix to the report for cultural resources identified as a result of the survey. The report should also have an appendix that contains a copy of the letter and bibliography from the Archaeological Information Center received as part of the records search. Another appendix should provide resumes for cultural resources specialists that contributed to the report.

BACKGROUND

Data Adequacy Response Set 1 included a discussion of the built environment surrounding the EAEC project site. The discussion did not include the ages of the structures and features identified in the built environment. In addition, the response did not include the location of any of the older features that the response indicates will not be impacted by the project. Staff needs more specific information to complete an analysis.

DATA REQUEST

67. Please have an architectural historian or a specialist in industrial or architectural history conduct a survey of the potential project area.

Please provide descriptions of buildings, features and structures around the project area that could be affected (directly or indirectly) by the proposed project. The survey may be limited to an area one property deep, unless there is an obvious potential historic resource, not within the specified one property limit that may be impacted.

Please provide a characterization of the areas in the vicinity of the project and linears (how old, industrial, residential etc.).

Record buildings, structures features etc. that may be greater than 45 years old on a Department of Parks and Recreation (DPR) Form 523 and provide a copy of that form. The recording may be limited to an area one property deep, unless there is an obvious feature recognized. For any properties that appear to be potentially eligible for either the California Register of Historic Resources (CRHR)

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or the National Register of Historic Places (NRHP), complete and record the evaluation portion of the form and provide a copy.

Please include, but do not limit the discussion to the following: The Delta Mendota Canal, the canal used as the route for Domestic Water Supply Line 3b, the Wicklund Canal, the California Aqueduct and the Tracy Substation.

Please provide a map (7.5 quad) of the proposed project and linears. Include the locations (identified either during the survey or historical research) of any properties, buildings, or features that are 45 years or older.

BACKGROUND

Staff needs to ensure that the project complies with all federal and state LORS. Table 8.14-8 indicates that a section 404 permit will be obtained in the event wetlands are disturbed

DATA REQUEST

68. Please provide a schedule that identifies the time frames necessary to obtain any federal or state permits.

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Technical Area: Hazardous Materials Management

Author: Alvin Greenberg

BACKGROUND

To assess the potential for impacts on the public associated with an accidental release of hazardous materials, staff needs the applicant to conduct site-specific modeling of down-wind concentrations should such a release occur. Staff also requires a description of the route to be used for transportation of such materials to the site

DATA REQUEST

69. Please provide accidental release modeling for anhydrous ammonia as described in Section 8.12.3 of the AFC. Include an analysis of the distance to potential exposure of 75 PPM.
70. Please provide a detailed description (including preliminary design drawings) of the secondary containment structure identified in Section 8.12.6.2.
71. Please describe all vapor mitigation measures that would be implemented to reduce potential impacts of an accidental release.
72. Please provide a detailed description of the route(s) to be used for transportation of hazardous materials to the site once the delivery vehicle leaves an interstate or other major highway.
73. Please identify any traffic safety points such as railroad crossings or sharp curves along the routes requested in data request number 72, as well as all land uses along the route.

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Technical Area: Land Use

Author: Negar Vahidi and Mark R. Hamblin

BACKGROUND

On page 1-1 of the AFC, under section 1.1 Project Overview it states that “Calpine currently has a purchase option on a 174 acre parcel of agricultural land. The parcel is located in Township 1 South, Range 4 East, Mount Diablo base and meridian (MDB&M). The plant site would occupy up to 55 acres near the center of the property with the remainder available for lease as agricultural land.”

The legal status of the 174 acre parcel for this project is unknown based on the information provided in the AFC. Legal land division parcels are established in accordance to the procedures and the requirements set forth in the State Subdivision Map Act (Government Code section 66410 – 66499.58).

The information provided in the AFC describes an Assessor’s parcel. Assessor’s parcels are not legal land division parcels. Assessor’s parcels are generated by a County Assessor’s Office as a means of placing a value on property or portion thereof for the purpose of property taxation in accordance to the California Revenue and Taxation Code. The County Assessor does not divide or create parcels of land in conducting this process. The assignment of an Assessor’s Parcel Number to a property also provides a convenient and quick location reference for the County Assessor to identify a property on the property assessment roll within a County.

Section 17.52.090 of the Alameda County General Ordinance Code - Zoning regulations states “Every use in an A (agriculture) district shall be on a building site having an area not less than one hundred (100) acres.”

DATA REQUEST

74. Please explain whether the applicant has a recorded legal parcel of land on which to build.

Explain the land division procedure used to create the 174 acre parcel.

Provide a copy of the recorded final map, lot line adjustment map, or Certificate of Compliance for the subject property(ies).

The power generation facility is to be contained on a 55 acre portion of the 174 acre property. Discuss whether the proposed power plant is to be constructed on a single legal parcel of land.

Please explain if the applicant is going to be required to file a parcel map with the County of Alameda to create the parcel(s).

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BACKGROUND

Section 17.52.090 of the Alameda County General Ordinance Code - Zoning regulations states "The building height limitations set forth in this title apply generally to structures, also, but shall not apply to chimneys, church spires, flag poles, or mechanical appurtenances necessary and incidental to the permitted use of a building."

The proposed project includes three 175 foot exhausts stacks for the HSRG units. The exhaust stack for the auxiliary boiler is 100 feet and the 230kV double-circuit transmission lines are 140 feet in height.

DATA REQUEST

75. If the project's proposed structures are taller than the Alameda County height limit for the agricultural zone, explain whether the applicant will seek a variance.

BACKGROUND

The East Altamont Energy Center (EAEC) is proposed to be developed on land that is defined as "Prime Farmland" as shown on AFC Figure 8.9-2. The applicant proposes to develop 55 acres of a 174 acre property, of which 10 acres would be dedicated to two evaporation ponds, five acres would be used as a wastewater recycle pond and approximately two acres would be used for a stormwater detention pond. The applicant proposes to lease the remaining 119-acres of undeveloped land within the parcel for agricultural use.

Policies 75 and 76 of the East County Area Plan of the Alameda County General Plan (ECAP) promote conservation of prime soils and the preservation of intensive agricultural use.

The proposed site is located outside of an Urban Growth Boundary and is designated "Large Parcel Agricultural" by the Alameda County General Plan. The site is located within an Alameda County agricultural (A) zone district. Section 17.060.010 of the Alameda County General Ordinance Code states:

"[Zone] A districts are established to promote implementation of general plan land use proposal for agricultural and other nonurban uses, to conserve and protect existing agricultural uses, and provide space for and encourage such uses in places where more intensive development is not desirable or necessary for the general welfare."

DATA REQUEST

76. Please provide a letter from the County of Alameda Planning Department stating whether or not the proposed land use is consistent with ECAP Policies 75 and

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76, and Zone Section 17.060.010, and if any mitigation is required by the applicant.

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Technical Area: Noise

Author: Jim Buntin

BACKGROUND

The Energy Commission typically assesses a 5 dB noise level increase threshold of potential significance by comparison of the steady state noise level due to the power plant to the average (or typical) L_{90} values obtained during nighttime hours, as noted by the applicant. The applicant has summarized the average hourly L_{90} values collected in the long-term noise measurement periods in the text of the AFC. However, the hourly noise level data were not provided.

DATA REQUEST

77. Please provide the hourly L_{eq} , L_{50} , and L_{90} values for noise measurement sites 1 and 2 in tabular format. Note any time periods where it is believed that extraneous noise sources affected the noise level data.

BACKGROUND

The applicant has stated that “an increase of more than 5 dBA in a very quiet environment may not necessarily result in an adverse effect.” The analysis presumes that compliance with the 45 dBA criterion of the LORS, and the offer to provide additional sound insulation for affected residences, will be sufficient to avoid a significant noise impact. The applicant’s data indicates compliance with the 45 dBA criterion would result in an increase of 14 dBA at measurement site 1. This is likely to be excessive in view of the reported background noise levels in the range of 35 dBA.

DATA REQUEST

78. Please provide an acoustical analysis to address compliance with a noise standard of 40 dBA L_{90} at the nearest noise sensitive receivers. Include a listing of any additional required noise control measures. Provide a cost estimate for the additional noise mitigation measures required as compared to the cost of those currently proposed to achieve the LORS standard of 45 dBA. Include the benefits of any reductions in noise mitigation costs at affected residences.

BACKGROUND

The initial start-up of a combined-cycle power plant typically includes steam pipe cleaning by means of “steam blows.” No discussion of the noise effects of this specific practice was provided in the AFC.

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DATA REQUEST

79. Please provide a discussion of the potential noise effects associated with steam blows for the proposed project at the nearest sensitive receptors. Include estimates of steam blow noise levels, their effects, and any proposed mitigation measures.

BACKGROUND

Pile driving is sometimes used for power plant construction. Noise and vibration from pile driving can be significant at adjacent sensitive receptors. The listing of construction noise sources contains no reference to such equipment use.

DATA REQUEST

80. If pile driving is planned, please provide a discussion of the potential noise and vibration effects associated with pile driving for the proposed project at the nearest sensitive receptors. Include estimates of pile driving noise and vibration levels, their effects, and any proposed mitigation measures. If pile driving is not proposed, please so state.

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Technical Area: Water and Soil Resources

Authors: Lorraine White, John Scroggs, Jim Henneforth & John Kessler

BACKGROUND

Construction and operation of the East Altamont Energy Center (EAEC) may induce water and wind erosion at the power plant site. Stormwater runoff may also contribute to erosion and sedimentation as well as transport of pollutants off-site. Currently, stormwater drains via a series of ditches into the Delta-Mendota Canal. Once constructed, the site stormwater will drain into a holding pond, before being released into the Delta-Mendota Canal. A Stormwater Pollution Prevention Plan will be necessary, which addresses how drainage into the holding pond will be monitored for contaminants to determine adequate quality of stormwater before being released. In addition, an Erosion Control Plan is required that addresses construction activities at the power plant facility, and any associated linear or other facilities, such as transmission lines, pipelines, lay-down areas, and staging/storage areas. Lastly, relatively shallow depths to groundwater may be encountered, and as identified in the Phase I ESA, soil and/or groundwater contamination may exist and may be encountered during construction.

DATA REQUEST

81. Please provide a draft Erosion Control Plan that identifies all measures that will be implemented at various locations of the project during construction and operation of the proposed EAEC Project. The draft Erosion Control Plan should identify all permanent and temporary measures in written form and depicted on a construction drawing(s) of appropriate scale. The purpose of the plan is to minimize the area disturbed, to protect disturbed and sensitive areas, to retain sediment on-site and to minimize off-site effects of stormwater runoff. The elements of the plan shall include specific best management measures to be employed to control stormwater runoff during construction and operation at identified locations. In addition, any measures necessary to address Nationwide Permits, as required, should be identified. The plan should also identify maintenance and monitoring efforts for all erosion control measures.
82. Include in the Erosion Control Plan a discussion and description of how this plan will address encountering non-contaminated groundwater during excavations, as well as any contaminated soil or groundwater that may be excavated or encountered during construction. Specifically address how stormwater that has come into contact with any contaminated materials will be collected, treated, and discharged.
83. Please provide a draft Storm Water Pollution Prevention Plan (SWPPP) consistent with the requirements for a General Storm Water Construction Activity Permit for the EAEC property that includes site modifications necessary to

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accommodate the power plant. Include in this draft plan a spill prevention and countermeasures plan.

BACKGROUND

According to the AFC, the proposed project will require an average annual water supply demand of approximately 4,600 acre-feet, with daily demands varying from 4.0 million gallons a day (MGD) (2,772 gpm) on average, to 9.1 MGD (6,322 gpm) maximum. Peak annual demands could be as high as 7,000 acre-feet. Although recycled water is being considered from a prospective source, the Mountain House Community Service District (MHCSD), that has yet to be developed, the project is primarily relying on the use of fresh water and a mechanical draft evaporative wet tower for cooling purposes. Such use of fresh water for cooling purposes is discouraged in accordance with the California Water Code and Alameda East County Area Land/Water Use Policies.

Alternatives to wet cooling and the proposed water supply must be more fully evaluated. As examples to alternative sources of recycled water supply, the City of Tracy's Wastewater Treatment Plant, located within approximately 10 miles of EAEC, has a current capacity of 9.0 MGD and is planning expansion to 16 MGD. Likewise, the Discovery Bay Community Services District's Wastewater Treatment Plant, located within approximately 6 miles, has a current capacity of 1.4 MGD and is planning for expansion to 2.1 MGD. The AFC provides only a limited discussion of alternatives (AFC pages 2-9 thru 2-12, 7-1 thru 7-15, 8.14-4 through 8.14-8, and 9-9 through 9-10).

DATA REQUEST

84. Please provide an evaluation of the use of dry and wet/dry cooling alternatives. The analysis should include the impacts on water use and waste discharge, economic impacts (capital, and operating costs), plant efficiency and output, and environmental impacts (particularly land use, noise, visibility, emissions).
85. The applicant has indicated that the Wet Cooling Towers will operate at 3 - 8 cycles of concentration. Other facilities that have employed zero discharge systems are capable of greater cycles of concentration, thus maximizing the efficiency of water use on site. Please provide an analysis and discussion of the possibilities of cycling the concentrations in the cooling towers up to 10, 15 and 20 times. Include in the analysis the use of a side stream softening system. Explain any constraints that may limit the number of cycles of concentration. The analysis should include the impacts on water use and waste discharge, economic impacts (capital and operating costs), plant efficiency and output.
86. Please conduct a comparative feasibility analysis on the use of alternative sources of water supply for cooling purposes, such as Reclaimed Water from the Cities of Tracy and Livermore, and Discovery Bay Community Services District.

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Include in this analysis data for the alternatives in comparison to the proposed use of fresh water from BBID, and prospective use of recycled water originating from MHCSD. The analysis should consist of a discussion of the following: a) water currently available and projected to be available over the next 20 – 30 years; b) impacts on water use and waste discharge; c) economic impacts (capital, and operating costs including water purchase price); d) changes in plant and linear facility infrastructure; e) plant efficiency and output; and f) environmental impacts (particularly land use, biological and cultural resources, agriculture and soils, geologic hazards, and traffic and transportation). Data and results should also be summarized and presented in tabular form.

87. Please provide excerpts from any reference documents demonstrating recognition and priority of BBID's Pre-1914 Water Rights up to 60,000 acre-feet/year by the SWRCB, and/or by the SWP and CVP in administering Cal-Fed and the CVPIA.

BACKGROUND

The AFC states that by the year 2024, an estimated 50 percent of the project's water requirements will be supplied by recycled water from the MHCSD wastewater treatment plant. As stated before, peak water demand at the EAEC facility is estimated to be 7,000 AFY of which approximately 3,000 AFY is projected to come from recycled water. Assuming a typical wastewater flow of 70 to 100 gallons per person per day, the Mountain House CSD plant would need to serve some 30,000 to 40,000 residents and the wastewater plant would need to be constructed with a capacity of 3 to 4 MGD. It is our understanding that the MHCSD plant will be constructed north of Bethany Road with an initial capacity of 0.45 MGD. The second phase of this plant would increase capacity to 1.5 MGD. There are no residents presently served, nor homes constructed in the MHCSD. At this point, staff consider the supply of recycled water to be speculative, and need additional information to clarify the potential availability of this resource. The ultimate capacity and ability of the wastewater treatment facility to serve the plant is dependent on future undefined development.

DATA REQUEST

88. Please provide master plan projections from the San Joaquin County Planning Department to verify that the new community of Mountain House is projected to develop with a population of \pm 40,000 persons by the year 2024.
89. Please compare projected water use and wastewater discharge volumes for the anticipated Mountain House development with similar new towns that have been developed, or are projected for development, for the East Alameda, South Contra Costa, or Western San Joaquin County region. Please provide all appropriate references. Also include in this comparison information on the anticipated growth

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versus actual growth and or development of these new towns over time to actual build out.

BACKGROUND

A zero-liquid wastewater discharge system is proposed with concentrated brine from the cooling tower treatment system to be discharged to two 5-acre evaporation ponds. An intermediary 5-acre wastewater recycle pond is also proposed. The two ponds would receive daily loading of approximately 5 to 53 gpm depending on plant load and service water quality. According to the AFC, the ponds have been designed for a 100-year return period.

DATA REQUEST

90. Average annual rainfall data has been provided. Please provide monthly rainfall total for a 100-year return period typical of the project area.
91. Please provide evaporation rates typical of wet year conditions. Please clarify whether the evaporation rates provided are "pan rates" or "pond rates," and why 90% of the mean evaporation rate was suggested as appropriate for wet year conditions.
92. Please provide a pond balance under 100-year return conditions, wet year evaporation rates and an evaporation pond discharge rate of 20 gpm (Figure 2-2-6b, Plant water balance average day, 100% recycled water).
93. Please provide a written verification from the CVRWQCB that the EAEC report of waste discharge (ROWD) for the project wastewater discharge system (evaporation ponds) has been deemed complete.

BACKGROUND

The proposed wastewater system includes one brine concentrator with discharge to two, 5-acre evaporation ponds. When the brine concentrator is out of service, the reject stream from the high TDS reverse osmosis process would be discharged directly to the evaporation ponds. Under average day conditions, this would increase plant loading to the evaporation ponds from the proposed 5 to 20 gpm, up to 132 to 265 gpm. In addition, other projects have proposed a zero liquid discharge system by including a brine crystallizer, eliminating the need for evaporation ponds.

DATA REQUEST

94. Evaluate the feasibility of providing redundancy for the brine concentrator versus demonstrating the capacity of the evaporation ponds to manage the increased loading in the event of loss of the brine concentrator for an extended period.

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95. Evaluate the feasibility of implementing a brine crystallizer system that would result in no liquid wastewater discharge from the project (onsite or offsite) as an alternative to the evaporation and the wastewater recycle ponds proposed at the EAEC. The analysis should include the impacts on water use and waste discharge, economic impacts (capital and operating costs), plant efficiency and output, solid waste disposal and environmental impacts.

BACKGROUND

Sanitary wastewater from sinks, toilets, shower and other sanitary facilities are proposed to be discharged to an onsite septic tank and leach field. According to the Manual of Septic Tank Practice (U.S. Department of Health, Education & Welfare), the soil in the leach field disposal area must be suitable for the absorption of septic tank effluent without interference from groundwater. The maximum seasonal level of the ground water table should be at least 4 feet below the bottom of the leach field trench. Ground water levels in the vicinity of the EAEC site are reported to be within 0 and 10 feet of the existing ground level. The on-site leach field disposal system must be approved by the Alameda County Environmental Health Department.

DATA REQUEST

96. Provide information on the design of the leach field disposal system under the potentially high groundwater conditions.
97. Provide status of the leach field disposal permit application with Alameda County Environmental Health.

BACKGROUND

According to the AFC, miscellaneous general plant drains will collect area washdown, sample drains, equipment leakage, and drainage from facility equipment areas. Water from these areas will be collected in a system of floor drains, hub drains, sumps and piping and routed to the wastewater collection system. Drains that potentially could contain oil or grease will first be routed through an oil/water separator. Water from the plant wastewater collection system will be recycled to the cooling tower basin.

DATA REQUEST

98. To evaluate how washdown water is to be contained and recycled, please provide an onsite water / wastewater / stormwater piping plan at a scale of 1" = 100' or larger. Label drain pipes and identify pipe sizes and pumping facilities as necessary.

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BACKGROUND

Chemicals are proposed for cooling tower conditioning consisting of sulfuric acid for alkalinity reduction and for control of scale, a polyacrylate solution for scale, and sodium hypochlorite to prevent bio-fouling. In addition, chemical conditioning is proposed for the HRSG and auxiliary boiler makeup water consisting of an oxygen scavenger, a neutralizing amine, and a phosphate solution. Chemicals are also proposed for the cooling tower blowdown treatment system (sodium hydroxide, magnesium oxide, etc.) In general, bulk storage of chemicals is proposed with two full capacity metering pumps delivering chemicals in proportion to flow. Table 8.12-2 summarizes the use and storage location of hazardous materials, while Table 8.12-3 summarizes the maximum quantity of hazardous materials stored onsite.

DATA REQUEST

99. Please describe the capacity (in days of average plant operation) that each chemical container is designed to provide.
100. Please distinguish for each chemical container as to whether it is located inside a covered area or outside, and the volume of secondary containment proposed as may be appropriate either individually by container, or for a group of containers within a storage site.
101. Demonstrate how chemical storage areas are to be drained back to the cooling tower basin with prevention of drainage to the stormwater system.
102. In general, water and wastewater system chemicals are to be added in proportion to flow. Please explain whether chemical dosage control systems are proposed that will sample and maintain chemical concentrations within high and low tolerances (set points). Also specify if the proposal includes alarms that will cause systems or plant operations to shut down in the event chemical concentrations are out of allowable range.

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Technical Area: Traffic and Transportation

Author: David Flores

BACKGROUND

The pipeline construction activities for the natural gas fuel line and the water supply lines will result in work being done in roadway rights-of-way. The proposed routes are on narrow rural roads with poor lane marking, small or no shoulders and in some cases poor driving visibility. On Mountain House Road, an elementary school is located just south of the project site, along with a number of residences and other businesses that also require traffic access.

DATA REQUEST

103. Please discuss the traffic impact that pipeline construction may have on the elementary school, local residents, business and on street parking.

Please discuss the mitigation measures planned to minimize the impact.

104. Please indicate the types of traffic control programs that will be used to ensure safe roadway conditions, (such as lane marking, construction notices, roadway signage, detours, flagperson, etc.).
105. Please indicate what policies will be in place to ensure workers will park in designated areas.

Please indicate if transportation will be available from a central parking area to and from the work site for the linears.

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Technical Area: Visual Resources

Author: Michael Clayton

BACKGROUND

Vapor plumes are discussed in section 8.11.2.3 Project Appearance—Proposed Project and section 8.11.2.4 Assessment of Visual Effects. Although plume heights have not been identified in the AFC (Visual Resources Data Requests 6 and 7 of the First Set of Data Requests have asked for this information), project plumes will clearly be visible from a greater area than indicated on the viewshed map provided as Figure 8.11.1. Energy Commission staff will model the project's visible plumes and identify the plume height to be used for viewshed determination. Staff will then ask the applicant to respond to the following two data requests:

DATA REQUEST

106. Using the plume height provided by Energy Commission staff, please either revise Figure 8.11-1 to include the viewshed boundary for the representative plume, or provide a new figure that identifies the viewshed boundary of the representative plume. Show on the map the location of any other vapor or non-vapor exhaust plumes that would be visible within the proposed project's plume viewshed.
107. Please describe and identify the location of any other vapor or non-vapor exhaust plumes that would also be visible within the proposed project's plume viewshed.

BACKGROUND

As referenced in Visual Resources section 8.11.2.3 Project Appearance—Proposed Project, Figure 2.2.2 is identified as providing typical elevation views. Although Table 8.11-2 is referenced for facility dimensions, Figure 2.2.2 does not identify facility components or provide facility dimensions.

DATA REQUEST

108. In order to facilitate the reader's understanding of project scale and structural relationships, please revise Figure 2.2.2 to include names and heights of key project components.

BACKGROUND

The discussion of pipelines on page 8.11-17 of the AFC identifies the need for a gas metering station at the interconnection with the PG&E gas pipeline. In response to a *Visual Resources Data Adequacy Deficiency, the Applicant has stated that the metering station would be located on a "...150-foot by 150-foot area surrounded by an

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eight-foot high chain link fence” (p. 31 of Data Adequacy Responses Set 1). It is understood that gas pipeline alternatives 2A (preferred) and 2C would result in the placement of the metering station in the existing PG&E Gas Compressor Station which is visible in Visual Character Photo 2 of Figure 8.11-2a. However, Alternatives 2D and 2E would require the metering station to be located “...along the portions of the PG&E pipeline adjacent to the Delta-Mendota Canal, which are somewhat removed from potential viewers and where the berm along the canal would provide backdropping for the station’s features” (AFC p. 8.11-17).

DATA REQUEST

109. Please provide high quality color images of the gas metering station locations associated with gas pipeline alternatives 2D and 2E as viewed from the nearest point of public access.
110. Please provide a CD containing electronic versions of the images requested in Data Request No. 4 above.

BACKGROUND

Project night lighting is discussed in section 8.11.2.3 Project Appearance—Proposed Project (p. 8.11-15) and section 8.11.2.4 Assessment of Visual Effects (p. 8.11-22) no mention is made as to the need for Federal Aviation Administration (FAA) stack warning lights. Further, there is no discussion as to the need for night lighting during the 24-month construction period.

DATA REQUEST

111. Please identify whether or not facility stack lighting would be required and if so, by which agency or requirement, and in what manner.
112. Please describe the extent to which night lighting would be required during project construction and how construction lighting would be limited to the immediate area where construction activities would occur.

BACKGROUND

The Applicant has provided simulations of the proposed landscaping at 20 years in response to Visual Resources Data Request 2c of the First Set of Data Requests.

DATA REQUEST

113. Please specify whether the proposed landscaping is expected to reach maturity at approximately 20 years.

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Technical Area: Visual Resources – Plume Analysis
Author: William Walters

BACKGROUND

The Applicant modeled the visible cooling tower plumes using a modified version of the air pollutant model ISCST3, with additional computation modules called CLAUSIUS, DISTANCE, and COUNT. Staff will model the cooling tower plumes using the SACTI and CSVP models. In order to complete this modeling assessment and comparison with the Applicant's modeling analysis staff needs additional cooling tower design information and the Applicant's hourly modeling analysis results data.

DATA REQUEST

114. For SACTI modeling, please provide the cooling tower dimensions and exhaust parameters:
- Tower length
 - Tower width
 - Tower exhaust height
 - Design inlet air flow rate (kg/s)
 - Heat rejection rate (MW/hr)
115. For staff to conduct CSVP modeling of the cooling tower exhaust, please at a minimum provide cooling tower operating data to fill the following table. The values must correspond to maximum operating conditions at the specified ambient conditions.

Ambient Condition	Exhaust Velocity (m/s)	Exhaust Flow Rate (lbs/hr/cell)	Exhaust Temperature (°F)
40°F, 80% RH			
40°F, 60% RH			
40°F, 40% RH			
60°F, 80% RH			
60°F, 60% RH			
60°F, 40% RH			
80°F, 80% RH			
80°F, 60% RH			
80°F, 40% RH			

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Please note that staff intends to model the cooling tower using hourly estimated exhaust conditions based on the hourly ambient conditions of the meteorological file used to perform the modeling. The cooling tower exhaust will be assumed to be saturated at the exhaust temperature provided through interpolation. Therefore, additional combinations of temperature and relative humidity, if provided by the applicant, will be used to more accurately represent the cooling tower exhaust conditions.

116. Please provide the preliminary liquid-to-gas (L/G) ratio design basis for the cooling tower.
117. The Applicant modeled the cooling tower exhaust at approximately an 80% saturation level. Please indicate if the cooling tower has any plume mitigation features that would significantly reduce the assumed 100% moisture content of a conventional cooling tower exhaust.
118. If no plume mitigation is proposed for the cooling tower, please provide the calculations and associated vendor data used to determine the modeled saturation level and provide calculations that show that this saturation level is appropriate for the range of ambient conditions that can be expected at the project site.

BACKGROUND

The Applicant modeled the visible Heat Recovery Steam Generator (HRSG) exhaust plumes using a modified version of the air pollutant model ISCST3, with additional computation modules called CLAUSIUS, DISTANCE, and COUNT. Staff will model the HRSG exhaust plumes using the CSVP model. In order to complete the comparison with the Applicant's modeling analysis results, staff needs additional Applicant modeling analysis results data.

DATA REQUEST

119. The HRSG exhaust characteristics provided by the Applicant in Table VIS-7.4 of the Data Request and Response Set #1 did not specify the ambient conditions assumed and do not appear to include steam injection power augmentation. In order for staff to more accurately model the visible plume potential for the HRSG exhausts please provide the exhaust data to complete the following tables.

Ambient Condition	Moisture Content (% by weight)	Exhaust Flow Rate (lbs/hr)	Exhaust Temperature (°F)
Full load with Duct Firing and Power Augmentation			
40°F, 80% RH			
40°F, 60% RH			

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Ambient Condition	Moisture Content (% by weight)	Exhaust Flow Rate (lbs/hr)	Exhaust Temperature (°F)
40°F, 40% RH			
60°F, 80% RH			
60°F, 60% RH			
60°F, 40% RH			
80°F, 80% RH			
80°F, 60% RH			
80°F, 40% RH			
Full load with Power Augmentation no Duct Firing			
40°F, 80% RH			
40°F, 60% RH			
40°F, 40% RH			
60°F, 80% RH			
60°F, 60% RH			
60°F, 40% RH			
80°F, 80% RH			
80°F, 60% RH			
80°F, 40% RH			
Full load no Duct Firing and no Power Augmentation			
40°F, 80% RH			
40°F, 60% RH			
40°F, 40% RH			
60°F, 80% RH			
60°F, 60% RH			
60°F, 40% RH			
80°F, 80% RH			

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Ambient Condition	Moisture Content (% by weight)	Exhaust Flow Rate (lbs/hr)	Exhaust Temperature (°F)
80°F, 60% RH			
80°F, 40% RH			

Please note that staff intends to model the HRSG exhausts using hourly estimated exhaust conditions based on the hourly ambient conditions of the meteorological file used to perform the modeling. Therefore, additional combinations of temperature and relative humidity, if provided by the applicant, will be used to more accurately represent the cooling tower exhaust conditions.

120. Please provide the ISCST3 HRSG plume modeling input, output and meteorological files electronically; with the hourly plume dimension results provided in spreadsheet form.

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Technical Area: Transmission System Engineering

Author: Ajoy Guha, P. E.

BACKGROUND:

Staff needs a complete Interconnection Study Report to analyze the system reliability impacts due to interconnection of the project, and to identify the interconnection facilities including downstream facilities necessary to support interconnection of the project. Project interconnection must comply with North American Electric Reliability Council (NERC) Planning Standards and Western Systems Coordinating Council (WSCC) Reliability Criteria. The proposed interconnection facilities are described in Sections 5.2.2, 5.2.2.1 and 5.2.2.2. The load flow studies for 2005 heavy summer cases and short circuit studies are discussed in the system impact study report of Attachment TSE-1 with list of contingencies and study results in Appendices II and III respectively. The transient stability studies are discussed in the system impact study report, Appendices A & B. The report summary and study plan mention a 2005 spring analysis, however, no information about the study results for 2005 spring case was provided. The staff observes that the information, data and study results in the system impact study report, Attachment TSE-1, and Appendices II & III, are very sparse and incomplete, and do not sufficiently address the mitigation measures. The transient stability study should include more critical contingency cases. In view of the extensive study data, the staff needs a comprehensively concise study result in a summary and table format to assess the impacts under normal and line outage conditions within the Western Area Power Administration (Western) Transmission system and in the surrounding bulk power network. The Energy Commission staff, therefore, needs more complete information in order to assess the transmission impacts in the 2005 heavy summer case and the study results for the 2005 spring case.

DATA REQUESTS:

Please provide the following data from the Transmission Owner's (TO) System Impact Study for the project:

121. Load Flow Study:

- a. The TO's Planning and Reliability Criteria including normal and emergency overload and voltage limit criteria, fault current limit and system stability.
- b. All the approved future transmission projects added in the base cases. Please also mention all the proposed queue generation operational in the study area before the on-line date of the EAEC project. Please provide an electronic copy (*.sav and *.drw) of the base cases (2005 heavy summer and 2005 spring cases) and all the relevant EPCL (and/or AUTOCON) contingency files for the GE PSLF program.

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c.

- i) To demonstrate conformance or non-conformance with the Utility Reliability and Planning Criteria, for 2005 heavy summer and 2005 spring cases:
 - (1) Please state if under normal (N-0) condition, there will be any overloads (exceeding normal thermal capacity) or any voltage violations (exceeding normal limits) in the transmission facilities within the Western and surrounding Cal-ISO, SMUD, MID and TID power network with and without the new EAEC project, and with the EAEC Project and any proposed downstream transmission projects. Provide load flow diagrams (showing MVA and percentage loading) for all base cases.
 - (2) Please summarize in a table the single contingency (N-1) cases for which there will be overloads (mention any overloads above 100% of applicable emergency rating) or voltage violations (mention any voltage violations beyond applicable limits) in the transmission facilities within the Western and the surrounding Cal-ISO, SMUD, MID and TID power network with and without the new EAEC project. Please state in the same table the respective mitigation measures and especially mention revised loading for cases where any new or modified downstream facilities will be proposed.
- ii) Provide load flow diagrams (showing MVA and percentage loading) for all criteria violation cases with and without the EAEC project, and with the EAEC project and any proposed downstream transmission projects.

d.

- i) To demonstrate conformance or non-conformance with the NERC Planning Standards and WSCC Reliability Criteria, for 2005 heavy summer and 2005 spring cases, please summarize in a table for double contingency (N-2) cases for which there will be overloads (mention any overloads above 100% of applicable emergency rating) or voltage violations (exceeding applicable limits) in the transmission facilities within the Western and the surrounding Cal-ISO, SMUD, MID and TID power network with and without the new EAEC project. Please state in the same table the respective mitigation measures and especially mention revised loading for cases where any new or modified downstream facilities will be proposed.
- ii) Please also include in the load flow study the following contingency cases:

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- (1) Outage of Tracy 230 kV west bus section and the connected 230 kV lines & 500 kV/230 kV transformer.
- (2) Outage of Tracy 230 kV east bus section and the connected 230 kV lines & 500 kV/230 kV transformer.
- iii) Provide load flow diagrams (showing MVA and percentage loading) for all criteria violation cases with and without the new EAEC project, and with the EAEC project and any proposed downstream transmission projects.

122. Transient Stability Study:

- a. To demonstrate conformance or non-conformance with the NERC Planning Standards and WSCC Reliability Criteria, please analyze and provide data as follows:
 - i) Run dynamic simulations with 2005 spring case and provide stability plots for the N-1 and N-2 contingency cases as studied for 2005 heavy summer case.
 - ii) Please include the following additional dynamic simulations to run with 2005 heavy summer and 2005 spring cases and provide stability plots:
 - (1) A 3-phase fault with 6-cycle clearing at the Tracy 230 kV bus, followed by tripping of Tracy-Hurley 230 kV line No.1.
 - (2) A 3-phase fault with 6-cycle clearing at the Tracy 230 kV bus, followed by tripping of Tracy 500/230 kV transformer No.1.
 - (3) A 3-phase fault with 4-cycle clearing at the Tracy 500 kV bus, followed by tripping of Tracy-Olinda 500 kV line.
 - (4) A 3-phase fault with 6-cycle clearing at the Tracy 230 kV bus, followed by tripping of Tracy-Hurley 230 kV line Nos. 1 & 2.
 - (5) A 3-phase fault with 6-cycle clearing at the Tracy 230 kV bus, followed by tripping of Tracy 500/230 kV transformer Nos. 1 & 2.
 - (6) A 3-phase fault with 4-cycle clearing at the Tracy 500 kV bus, followed by tripping of Tracy-Olinda and Tracy –Los Banos 500 kV lines.
 - (7) A 3-phase fault with 6-cycle clearing at the Tracy 230 kV bus, followed by outage of Tracy 230 kV bus west bus section and the connected 230 kV lines & 500 kV/230 kV transformer.

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(8) A 3-phase fault with 6-cycle clearing at the Tracy 230 kV bus, followed by outage of Tracy 230 kV bus east bus section and the connected 230 kV lines & 500 kV/230 kV transformer.

b. Please provide electronic copies (*.dyd & *.swt) of dynamic data and switching files for 2005 heavy summer and 2005 spring cases.

123. Short Circuit Study:

In order to comply with the NERC and WSCC planning standards for facility connection requirements, please summarize in a table a list of existing breakers and their short circuit ratings, and available fault currents with and without the new EAEC project at Tracy 500 kV & 230 kV, Tesla 500kV & 230 kV, Westley 230 kV, Hurley 230 kV and LLNL 230 kV substations. Please identify respective mitigation measures in the table. For the proposed EAEC 230 kV switchyard, provide the breaker normal and short circuit ratings and the available fault currents with the addition of the EAEC project.

124. Project Transmission Facilities:

The system impact study report, pages 1 & 5 including Figure 1 shows that the existing Tracy-Westley 230 kV double circuit single line should be modified to accommodate the EAEC project and be converted to two lines between EAEC 230 kV switchyard and Tracy, and also between EAEC 230 kV switchyard and Westley. But in Section 5.1, page 5-2 and in 5.2.2.1, page 5-5, it reads that the EAEC 230 kV switchyard-Westley portion of the line will remain as a double circuit single line. Please clarify the discrepancy and indicate the proposed transmission line configuration between Westley and the EAEC 230 kV switchyard to accommodate the EAEC project.